Maricopa County
Air Quality Department

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AIR QUALITY DEPARTMENT

V95002 —
407-582

STANDARD PERMIT APPLICATION FORM

(As required by A.R.S. § 49-480, and Chapter 3, Article 3, Arizona Administrative Code)

1. Permit to be issued to: (Business license name of organization that is to receive permit)
SFPP, L.P
2. Mailing Address: 1100 Town and Country Rd
City: Orange State: CA ZIP: 92868
3. Plant Name (if different from item #1 above):
SFPP, L.P. - Phoenix Terminal
4. Name (or names) of Owner or Operator:
SFPP, L.P.
Phone: (602) 278-8565
5. Name of Owner's Agent:
N/A
Phone: N/A
6. Plant/Site Manager or Contact Person:
Mr. Troy Eiffert
Phone: (602) 278-8565
7. Proposed Equipment/Plant Location Address:
49 N 53rd Avenue
City: Phoenix County: MARICOPA ZIP: 85043
Indian Reservation (if applicable):
Section/Township/Range:
Latitude: 33 ° 26 ' 55 " Longitude: 112 ° 10 ' 30 " Elevation: 1054 ft.
8. General Nature of Business: Petroleum and Bulk Chemical Stations and Terminal for Hire
Standard Industrial Classification Code: 4226
9. Type of Organization: ☐ Corporation ☐ Individual Owner
☑ Partnership ☐ Government Entity (Government Facility Code:)
L.P.
☐ Other:
10. Permit Application Basis:
☐ New Source ☑ Revision ☐ Renewal of Existing Permit
☐ Portable Source ☐ General Permit (Check all that apply.)
For renewal or modification, include existing permit number:
Date of Commencement of Construction or Modification:

Is any of the equipment to be leased to another individual or entity?
☐ Yes ☑ No

11. Signature of Responsible Official of Organization
Official Title of Signer: Director of Operations
12. Typed or Printed Name of Signer: Philip L. Vasquez
Date: 4-28-15 Phone Number: (909) 873-5123

SABS Environmental Services, Inc.
427 9th Street
Huntington Beach, CA 92648
www.sabsconsulting.com

April 30, 2015

Mr. Robert Tate
Maricopa County Environmental Services Department
1001 N. Central Avenue, Suite 400
Phoenix, AZ 85004

Subject: SFPP, L.P. Phoenix Terminal,
Modification to Title V Permit No. V95-002

Dear Mr. Tate:

On behalf of SFPP, L.P. (SFPP), SABS Environmental Services (SABS) submits herein an application to allow the conveyance of vapors generated during tanker truck loading at loading racks LR-9, LR-10, and LR-11 to its John Zink Thermal Oxidizer in lieu of the existing Carbon Adsorption Units (CAU-1 and CAU-2). This application will qualify as a minor modification in that all emissions increases associated with the modification will be less than values contained in Section 200.99 of Maricopa County Regulation I, Rule 100 – General Provisions and Definitions. However, after discussions with Maricopa County personnel, it was determined that the application will be processed as a significant revision. As such, a check for $1000.00 is enclosed as the fee for a significant revision. It should also be noted that the proposed saturator included with the application for the recently installed John Zink Burner will be installed at a later date after connections with loading racks LR-9 through LR-11 have been completed.

This analysis is based on a maximum annual limit on combined throughput of 1,301,000,000 gallons for loading racks LR-9, LR-10, and LR-11. This throughput represents the combined total of throughput from the former Chevron and Conoco Phillips assets incorporated into the SFPP terminal. The former Chevron assets contribute 430,000,000 gallons[1] to this total and the former Conoco Phillips assets contribute 871,000,000 gallons[2] to this total. All throughputs are annual volumes. While a combination of petroleum products may be loaded over these racks (e.g., diesel, gasoline, transmix, jet fuel), emissions are based on the assumption that all throughput is gasoline loading. Table 1 presents the emissions increases associated with the modification along with the limits included in Rule 100. Explanations of how these emissions were arrived at follows the table.

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[1] TSD Permit Revision 0.3.0.0, June 28, 2011
[2] IBID

Table 1 – Increase in Emissions Compared with Significance Level

Pollutant	Increase, TPY	Significance Level, TPY
Carbon Monoxide	59.63	100
Nitrogen Oxides	10.96	40
Sulfur Dioxide	0.02	40
Particulate Matter	1.20	25
PM_{10}	1.20	15
VOC	0.00	40

VOC Potential to Emit (PTE) will not increase over the present allowable limit since all loading rack control equipment is required to meet the standard of 0.08 lbs/1000 gallons loaded (10 grams/1000 liters) and reduce the VOC in the vapors by a minimum of 95 % in accordance with Condition 18(b)(i)(1) and 18(b)(i)(2). Likewise, there will be no increase in Total Hazardous Air Pollutants or a Single Hazardous Air Pollutant as these are a function of VOC emissions. The speciation profile of the VOC emissions is not expected to change materially as a result of this modification.

As the vapors from loading racks LR-9, LR-10, and LR-11 are now treated in carbon absorption units (CAU-2 for loading racks LR-9 and LR-10 and CAU-3 for loading rack LR-11 with the alternate CAU as a backup), there will be an increase in combustion pollutant emissions. These increases are included in Table 1 and were calculated based on a maximum annual loading of 1,301,000,000 gallons of gasoline all processed through the thermal oxidizer.

Emissions from tanker truck loading may be estimated using the following equation from AP-42, Chapter 5 Section 2:

$$L = 12.46 \times SVM/T$$

Where:

L = Loading Loss, lbs/1000 gallons
S = Saturation Factor = 1 from Table 5.2-1
V = True Vapor Pressure of Gasoline at loading conditions (assumed to be 8.24 psia)
M = Vapor Molecular Weight at loading conditions (assumed to be 66 lb/lb-mole)
T = Temperature in degrees Rankin = 553.5

The data used in the emissions calculations has been selected to be consistent with the TSD Permit Revision 0.3.0.0 dated June 2011. The true vapor pressure is conservative in that it is based on a high loading temperature and assumes all loading is gasoline. Actual loading temperatures are expected to be lower over the course of a year as the annual

average maximum temperature in Phoenix is 85.1°F (545.1°R)[3]. In addition, the bulk liquid temperature of the loaded product is typically significantly lower than ambient temperatures.

The results of this calculation indicate that 12.24 lbs/1000 gallons are emitted during truck loading. However, due to truck tightness and vapor system losses, only 99.2 % of the generated vapors enter the thermal oxidizer. Multiplying 12.24 by 0.992 results in the corrected flow to the oxidizer of 12.14 lbs/1000 gallons.

The total pounds of vapor entering the oxidizer annually are calculated by multiplying the annual throughput of 1,301,000,000 gallons by 12.14 lbs/1000 gallons. This results in an annual vapor load of 15,800,125 lbs VOC.

To calculate a corresponding MMBTU value with this quantity of vapor, the LHV of natural gas was multiplied by the lbs of VOC. The LHV of natural gas is approximately 20,267 Btu/lb, however, 20,400 Btu/lb was used to be consistent with the calculations in the TSD Permit Revision 0.3.0.0. This multiplication results in an MMBTU value of 322,323 annually. The combustion pollutant emissions are calculated using AP-42 factors consistent with prior calculations of combustion pollutants at the Phoenix Terminal. The incremental increases for thermal oxidizer combustion pollutants are calculated by multiplying the specific emission factor times 322,323 MMBTU. The results are shown on Table 2.

Table 2 – Incremental Increase in PTE of Combustion Pollutants.

Pollutant	Emission Factor, lbs/MMBTU	Emissions, TPY
Particulate Matter	0.00745[4]	1.20
Nitrogen Oxides	0.068[5]	10.96
Sulfur Dioxide	0.00009[6]	0.02
Carbon Monoxide	0.37[7]	59.63

Table 3 which follows provides the necessary changes to the facility-wide emission limits based on the above calculated values. As before, monthly limits are approximately equal to ten percent of annual limits.

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[3] AP-42 Table 7.1-7
[4] AP-42 Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion"
[5] Derived from AP-42 Table 13.5-1 "Emission Factors for Flare Operations" as presented in TSD Permit Revision 0.3.0.0
[6] Based on gasoline sulfur content of 90 ppm
[7] Derived from AP-42 Table 13.5-1 "Emission Factors for Flare Operations" as presented in TSD Permit Revision 0.3.0.0

Table 3 – Changes to Facility-Wide Emissions

Pollutant	Monthly Emissions Limits, Tons		Twelve Month Rolling Emission Limits, Tons	
	Current	Proposed	Current	Proposed
VOC	46	No Change	462	No Change
NOx	2.4	3.5	24	35
CO	12	18.1	121	181
PM_{10}	0.25	0.37	2.5	3.7
$PM_{2.5}$	0.25	0.37	2.5	3.7
Total Hazardous Air Pollutants	2.4	No Change	24	No Change
Single Hazardous Air Pollutant	0.8	No Change	7.8	No Change

SFPP understands that there will be fugitive component emissions associated with the modification as new connections are made. These fugitive component emissions will be offset by reductions in fugitive component emissions associated with CAU-2 and CAU-3. SFPP plans to decommission the carbon adsorption units and remove them from the site as soon as practical. Since emissions from components already included in the permit assume 24/7 operation, removal of CAU-2 and CAU-3 will assure that fugitive component emissions will not be materially greater than under current operation.

The potential greenhouse gas (GHG) emissions have previously been addressed by SFPP and anticipated combustion of all loading rack vapors, including loading racks LR-9 through LR-11. The GHG emissions are included in Appendix B of TSD 0.3.0.0 Revision 1, a copy of which is included with this application. Significance for GHG increases is based on language in 40 CFR 52.21(b)(49) which defines a significant increase as an increase greater than 75,000 tons annually. GHG emissions from all sources at the Phoenix Terminal are less than 75,000 tons annually.

While the application is being processed as a significant revision in agreement with Maricopa County, the proposed modification complies with the requirements for a minor modification as identified in Rule 210 Section 405.1. Compliance with minor modification criteria is discussed as follows:

405.1.a. *Do not violate an applicable requirement.*

The subject change in abatement equipment will control emissions in accordance with the current permitted levels. All requirements identified in the Title V Operating Permit as well as all federal regulations will continue to be complied with.

405.1.b. *Do not involve substantive changes to existing monitoring, reporting, or recordkeeping requirements in the permit.*

No changes in monitoring, reporting, or recordkeeping will result from this modification. The CAM plan for the John Zink Burner recently approved by Maricopa County will be sufficient for assuring compliance.

405.1.c.(1) *Do not require or change a case-by-case determination of an emission limit or other standard.*

No such determination is required for this minor source change.

405.1.c.(2) *Do not require or change a source specific determination of ambient impacts.*

No ambient impact analysis is required.

405.1.c.(3) *Do not require or change a visibility or increment analysis.*

No visibility or increment analysis is required for this modification.

405.1.d. *Do not seek to establish nor to change a Title V permit term or condition for which there is no corresponding underlying applicable requirement and that the Title V source has assumed in order to avoid an applicable requirement to which the Title V source would otherwise be subject.*

The modification does not seek to establish or change a term for which there is no underlying requirement including a federally enforceable emissions cap (405.1.d.(1)) and an alternate emissions limit (405.1.d.(2)).

405.1.e. *Are not modifications under any provision of Title I of the Act or Rule 372-Maricopa County Hazardous Air Pollutants (HAPs) Program of these rules.*

The modifications are not modifications under the HAPs Program or Title I.

405.1.f. *Are not changes in fuels not represented in the permit application or provided for in the Title V permit.*

The modifications do not involve a change in fuels.

405.1.g. *The increase in the Title V source's potential to emit for any regulated air pollutant is not significant as defined in Rule 100-General Provisions And Definitions of these rules.*

The subject equipment will not result in any significant emission increase. A comparison of a significant emission for each pollutant has been provided in the discussion.

405.1.h. *Are not required to be processed as a significant permit revision under Section 406 of this rule.*

The proposed modifications are not required to be processed as a significant permit revision under Section 406. However, as noted previously, SFPP has agreed to have this application processed as a significant revision.

If you have any questions, please call me at (949) 606-3088.

Sincerely,

Robert S. Onufer
Principal, SABS Environmental Services

Enclosures

cc: Therese Tuazon, SFPP
Ron Wise, Project Manager, SFPP

$$L = 12.46 \times \frac{SPM}{T}$$

Where:

L = loading loss (lbs/1000 gallons)
S = saturation Factor (based on AP-42, Table 5.2-1)
P = TVP of liquid loaded
M = molecular weight of vapors (lb/lb-mole)
T = temperature of bulk liquid loaded (R)
Assumption:
S = 1, P = 6.6 psia, T = 553.5 R, M = 66 lb/lb-mole.

$$L = 12.46 \times \frac{1 \times 8.24 \times 66}{553.5} = 12.243 \frac{lb}{1000\ gal}$$

LOADING-PTE

Source	Commodity	Monthly Throughput, 1000 gal	Annual Throughput, 1000 gal	Loading Losses (lbs/1000 gallons)	Monthly Loading Emissions (lb/month)	Annual Loading Emissions (lb/year)
Existing KM, excluding Chevron Assests (based on Title V permit condition 18 (A) (2))	Gasoline	300,000.00	2,914,000.00	12.24	3,672,900.00	35,676,102.00
Chevron Assets (based on maximum allowable throughput from permit 960967)	Gasoline	43,000.00	430,000.00	12.24	526,320.00	5,263,200.00
Total Loading Emissions					4,199,220.00	40,939,302.00

Source	Annual Loading Emissions (lb/year)	Carbon Content	CO2 (lbs/year)	CO2 (MT/year)
Total Loading Emissions	40,939,302.00	85.5%	128,266,991.86	58,181.00

GHG Emissions - Combustion of Supplemental Fuel

Source	VOC emissions (tons/year)	VOC emissions (lbs/year) (A)	Fuel (MMscf/year)
15 HP emergency generator - limited to 500 hours of operation (natural gas/propane)	0.07	135.00	24.55

(A) VOC emissions calculated based on AP-42, Table 1-4.2 combustion factors for natural gas.

15 HP Emergency Generator

Annual Fuel Usage	24.55	MMscf/year
CO2 EF	53.02	kg CO2/MMBtu
CH4 EF	0.001	kg CH4/MMBtu
N2O EF	0.0001	kg N2O/MMBtu
HHV	1028	MMBtu/MMscf
CO2 Emissions	1,337.84	MT CO2
CH4 Emissions	0.03	MT CH4
N2O Emissions	0.003	MT N2O
CO2e emissions	**1,339.15**	MT CO2e

Facility-wide Greenhouse Gas Emissions

Source Type	CO2e (MT/year)
Loading Emissions	58,181.00
Generator Emissions	1,339.15
Total	**59,520.15**